

# MEMOIRS FOR THE INGENIOUS.

CONTAINING  
Several Curious Observations in *Philosophy*,  
*Mathematicks*, *Physick*, *History*, *Philology*, and  
other Arts and Sciences.

IN  
Miscellaneous Letters.

By *J. DE LA CROSE*, E.A.P.

FEBRUARY, 1693.

To be continued Monthly.

VOL. I.

*Nil admirari propè res est una, Numici,  
Solaque quæ possit facere & servare Beatum.*

Hor. l. 1. Ep. 6.

— *Dixere Deum namque ire per omnes  
Terrasque tractusque Maris, cælumque profundum,  
Hincque sibi tennes nascentem arcessere vitas.*

Virg. Georg. l. 4.

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Where are to be had the Memoirs for *January*.

## ADVERTISEMENT.

**T**He Title of these Memoirs was at first design'd with the word History, as it was printed in the Gazette, and as it is now at the beginning of this Month.

This carelessness has made me oversee the last Month as exactly as I could, in which I have observ'd some negligences of style, and some Print-faults, which the Reader is intreated to correct thus :

Page 9. line 10. Eclipsis read Elipsis. l. 33. beds r. Channels. p. 10. l. 19. this r. his. l. 28. remembers r. mentions. p. 13. l. 15. poles r. sides. l. 27. Hypothesis r. Hypotheses. p. 15. the last Paragraph beginning *In a word*, must be read before the first, beginning, *And thus*. p. 22. l. 40. of the Climates r. the diversity of the Climates. p. 24 l. 2. A H D E r. A B C D E. &c. in the Margin, p. 5. r. p. 20. p. 30. l. 4. r. 10. these Stones, these words being slip't out in some Copies.

*I hope that this month is more correct, and that the following will be so.*

Nuper Tarpeio quæ sedit culmine cornix  
Est benè non potuit dicere, dixit erit.

*I would have continu'd my Observations on the Original of Springs, but that I have past my word to that Gentleman, who has undertaken to write a General History of Fountains, not to meddle with this matter within two months.*

*I likewise forgot to set down a Table of the Letters of the last month, which I therefore join here to those of this.*

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# Memoirs for the Ingenious.

FEBRUARY, 1693.

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## LETTER VI.

### ARGUMENT.

*All that seems incredible is not so. Of a man tracing out Murtherers by their footsteps. Attestation of the matter of fact. An Historical Account of it. Its Possibility. Suppositions to explain this Phænomenon. The Nature and Conformation of the Particles of the Air, of the Effluviūms of living Bodies, of their several Qualities, of the force of Poysons, of the Variety of Pores. That these Effluviūms are not easily carried away by the Wind. Application of these Principles. Objections and Questions answered.*

S I R,

**I**Ncredulity in matters of fact is a piece of Prudence, when they are related by anonymous Authors, who chiefly aim at promoting the Sale of their Books, or gaining the admiration of the vulgar by surprizing stories: but how astonishing soever a relation may be, if it be confirmed by several hands, and especially by learned men, and Eye-witnesses we ought rather to confess our Ignorance, or at least to suspend our judgment, than to reject it upon a pretended impossibility.

I heard some months ago of a Murther discovered in France by a divining Wand, however I did not then take notice of it, lest the thing not proving true, or being ill reported, I should expose both Philosophy and the Philosopher to derision. But having since learned all the circumstances of that prodigious discovery, not by hear-  
F say,



say, but as they have been inquired into and set down by persons who cannot be suspected of credulity, as the *French King's Attorney*, the Lieutenant Criminal and other Magistrates of *Lions*, and the Colledge of Physicians of the same City, by the order and special directions of Monsieur *D'Acquin*, first Physician to that Monarch: so great and so many testimonies, not leaving any room for doubt or suspension; I applied my self wholly to find out the cause of that wonderful *Phænomenon*, wherein I think to have been so successful, that the suppositions I make contain nothing but what's agreeable to the true notions of natural Philosophy.

I must needs premise a short historical account of the whole matter; First, because it is necessary to understand my System; and secondly, because, tho you may have heard of this History, yet I am apt to think that it is in a very confused manner, and with such circumstances as render the relation incredible. As for instance, they ascribe the discovery to the turning of the Wand; whereas the principal cause is the internal motion or disturbance of the Discoverer; this turning being but an outward sign and consequence of it.

On the 5<sup>th</sup> of July, 1692. three Robbers of *Toulon* in *Provence*, the one called *Thomas*, a Seaman, the 2<sup>d</sup> *Andrew Pese*, a Fencer, and the 3<sup>d</sup> *Joseph Arnoul* a Taylor, went to the house of a Wine-Cooper of *Lyons*, and, under pretence of buying Wine, brought both the Merchant and his Wife into the Cellar, where they murdered them with a Sickle, while they were drawing the Wine into a large bottle. This done they went up to a Chamber, which served both for a Shop and lodging Room to the murdered; broke open their Trunk, and took away 130 Crowns, 8 Louis d'ors, and a silver Girdle, and then made their escape without being perceived by any one.

A Neighbor of the murdered, hearing that one *James Aymar Ternay* of *S. Veran*, near *S. Marcellin* in *Dauphine*, was noted for hunting out Robbers and Murtherers by their footsteps, caused him to come to *Lyons*, where this Countryman, having promised to find out the Assassins, provided he begun his search at the place where the fact had been committed; was by the Lieutenant Criminal's, and King's Attorney's order brought into the Cellar; where he was no sooner entred, but he felt a strange commotion, his pulse rising as in a violent Fever, and the Wand he holds, when he uses to search the Springs of Fountains, or hidden Boundaries and Treasures, turning quickly in his hands, especially upon the place where the bodies of the Husband and his Wife were fallen down.  
Thence



Thence he went up to the Shop, where the Robbery had been committed, and successively into all the streets and places through which the Murtherers had passed, till he went out of the City by the bridge of the *Rhone*, being accompanied with three men, that were admiring Spectators of all his doings. Sometimes he was sensible that there were two Accomplices, and sometimes that there were three. But his doubts were soon cleared, when still following his interior motions, he stop'd at a Gardeners house, where he affirmed that they had encompassed a Table, and handled a Bottle, amongst two others, upon which his Wand turned. Two Boys, who at first denied it, out of fear of being beaten, for having left the door open against their Father's orders, at last confessed that three men, whom they described, had crept into the house and drunk the Wine of the same Bottle, which our Countryman shewed.

Pursuing his search, he went to the water-side, where the steps of the Assassins, printed on the Sand, were a certain sign that they had taken Boat. He likewise followed them upon the River, and pointed at an Arch of the bridge of *Vienne*, which is not the usual passage; whence he infer'd, That they had no Waterman with them. During this Journey he caused his Boat to stop at all the landing places where the Murtherers had been a shoar, went directly to the Lodgings they took, shewed the Beds they lay in, the Table they sat at, and the Pots and Glasses they drunk out of.

Thus he came to a *French Camp* at *Sablon* in *Dauphine*, where being mightily disturbed, he perswaded himself he was in the presence of the Murtherers: but not daring to make use of his Wand to be convinced of it, lest the Soldiers should fall upon him, he returned to *Lyons* to beg a farther protection and assistance; he was sent back to the Camp with Letters of Recommendation; but before his coming, the Murtherers were gone to *Beaucaire* in *Languedoc*, drawn thither by the Fair, and the hope of a new Booty. However he followed them so far, going still to the places they had lodged at, and shewing the Beds, Tables and Vessels they had made use of.

While he was walking in *Beaucaire*, he stop'd at the door of a Prison, affirming that there was one of the Accomplices. Fourteen or Fifteen Prisoners were presented to him, among whom he marked out by the motion of his Wand, a crook'd-back Fellow, who an hour before had been taken for a small Theft, and was thereupon farther secured. Moreover he discovered, that the other two had taken the Road of *Nismes*. But he could not pursue them, both because he fell sick of the many disturbances he had lain under, and

that as the crook'd Fellow, who was that *Joseph Arnoul* the Taylor above mentioned, denied at first to have any knowledge of the Murther, and even ever to have been at *Lyons*; it was necessary that *Ternay* should go back with his Keepers, to confront him with his Landlords. By which it so plainly appeared that all what our Countryman had formerly told was true, that the wretched Taylor, not being able to deny it any longer, own'd the whole fact before the Judges, as it has been related, with this farther circumstance, That he kept the door, while his Accomplices were murdering the Man and his Wife. Hereupon he was sentenced to be broken up-on the Wheel, and on his execution day, *August 30*, being made to pass before the murdered's door, he confessed of his own accord That he had been the principal cause of that Assassinate, by suggesting the Robbery.

Before his execution several experiments have been made, in the Cellar, upon the Prisoner, and upon the Sickle, which was the Instrument of the Murther. The Wand is motionless in most Peoples hands, it commonly turns more or less quickly in the hands of those, who have the gift of discovering Fountains, and all these are inwardly agitated; some faint away immediately, others feel the commotion an hour after, and its allayed by eating. Seven or eight persons have been found by these experiments to be endowed with this virtue of discovering Murthers, unknown to former Ages. The murdering Sickle has been put amongst others, and our Peasant blind-folded; however as soon as he touch'd it, his pulse rose, he grew pale and swet, and the Wand turned with extraordinary quickness. All these experiments have been made with the greatest caution imaginable, in presence of *Mr. Panthot* Dean of the Physicians of *Lyons*, *Mr. Chauvin* another learned Physician, the Lieutenant Criminal, the King's Attorney, and several Persons of Quality: So that the Magistrate being fully satisfied of the sincerity of this Countryman, sent him in search of the two other Murtherers; he pursued them to *Toulon*, and the utmost Havens of *France*, but all in vain, for they, having heard from the Jaylor of *Beaucair* of the taking up of the Taylor their Accomplice, were embarked for *Genoa*.

At first sight this history seems almost incredible, tho' attested by so many eye-witnesses. but all the pretended impossibility arises from not well considering the strong operation of insensible Corpuscles and *unheeded motion*, of which there are innumerable instances, as you may see in most of the writings of the modern Philosophers, and especially in a Book of the late Honorable *Robert Boyle* upon this matter; to which you may add, if you please, the following Observations.



1. *All the living bodies do continually transpire.* This is plain of some Plants, Flowers, Fruits, and Animals, by their sensible smell: but this transpiration may be prov'd general, by that in animals full grown, the quantity of the aliments they take compared to that of the gross excrements, of which they discharge themselves, is not as 3 or 4 to 1, nay in some as 7 or 8 to 1; so that 3, 4, 7 or 8 parts of our food are converted into blood, humors, vital spirits, &c. to supply the continual *effluvioms* of our bodies.

2. *These Effluvioms must needs consist in very small Particles.* First, Because they steam out of all the pores of living bodies, some of which are extremely narrow, especially in Winter's time. Secondly, because they transpire, after they have been subservient to the uses of these bodies, and become so extraordinary thin and weak by several filtrations, that being not fit any longer for the functions of Life, they are expelled by nature to make room for fresh Spirits. Thirdly, because they are continually exhaled, and in great quantities, for out of the bodies of a Partridge and a Hare, which do not eat  $\frac{1}{4}$  or  $\frac{1}{2}$  pound of seeds or grass in a day, there transpire particles enough to direct a Setter, that smells and hunts them out by their footsteps.

3. *The Corpuscles or least Particles of the air of the Atmosphere are small blades, hard, smooth and flexible, rebounding as a Spring, and wrapt about themselves spirally or obliquely, so that they represent the figure of a hollow Tube or Cylinder.* They are hard, for Air is not easily transmutated; they are smooth, for they do not hurt the bodies through which they pass; they are flexible, for you may bend them any way; they rebound as a Spring or as a Steel-bow; for tho air may be reduced to so narrow a compass (as it's in Wind-guns) that it shall but fill the 2000<sup>th</sup> part of the space it takes up in its natural state; yet it cannot remain in that forced station, but endeavors with all its power to retake its own. Moreover the particles of the Air are hollow, for they contain many other corpuscles, as æthereal matter, vapors, exhalations of the Earth, Plants, and living Creatures. Besides, they are extraordinary light in comparison to other bodies; for to water they are as 800 to 1, which could not be if they were of a compact substance. Last of all, these particles or blades are *spirally* or *obliquely* rolled about themselves, in the form of a hollow Cylinder, for this figure is the most proper for condensation, since such Corpuscles can be squeez'd every way.

4. *The particles exhaling from living bodies may be said in general to be small, rigid, heavy, and viscons; but as to their figure and particular qualities, they differ as much from one another, as do the bodies from which they steam out.* Their smallness has been proved before, their hardness appears



appears in that their nature cannot be easily changed : their weight follows from their hardness, and is evident besides, from that they do not rise a great way in the Air. As to their toughness, it cannot be denied by him who shall consider, that they stick at every thing they meet with. It's likewise incontestable that these steams partake of the nature of the bodies whence they exhale, for having made part of their substance, they are impregnated with their qualities, and being hard and clammy cannot easily be alter'd.

5. All this may be confirmed by a thousand experiments. For so Set-Hounds hunt out the several sorts of Dears and Game after a different way. And not only do these particles vary in the divers species of animals, but even in animals of the same kind, either naturally or accidentally. Thus a Dog that pursues a Stag, will not lose its strain, because another Stag has passed the same way ; and a Spaniel, that goes back two or three miles to recover a thing which its Master has lost, cannot be directed but by the corpuscles that are exhaled from his body ; nay the greater or less quantity of them makes a different impression upon its smelling Nerves ; for 'tis this difference, which determines it to stop at the place, where the thing has been lost, to smell it out, to take it up, and carry it back to its Master : and to ascribe this *sagacity* to any other cause, would be to make this beast incomparably acuter than the best Philosopher in the world, whom I defy to do the same.

We cannot deny the inexhaustible Riches of Nature's wise and omnipotent Author, when we consider the various conformation of sensible bodies ; but as to insensible corpuscles, our senses being not able to perceive them, much less to be aware of any difference betwixt 'em, we hardly allow them existence when Reason compels us to it, and for the rest we suppose them as much alike as two drops of water. An error of great consequence in Physics, which however may be easily redressed by the help of a Microscope ; for corns of Sand that appear so alike to the Eye, are perceived through a magnifying glass to differ from one another in bigness, figure and colour. Let it be then for the future a general Axiom, *to judge of the sameness or variety of insensible corpuscles, by their real effects, and not by the prejudice of senses.*

6. *As the constitution of living bodies changes by diseases, passions and other accidents, so do likewise the corpuscles exhaling from them.* The case is plain by the instance of contagious diseases ; for the particles that steam out of the bodies of them who are tainted with it, infect the room and the beds they lye in, the linnen, cloaths and vessels they make use of. And as to passions, if we consider the sudden changes that

that fear, anger, hatred, and eagerness produce upon the faces of men; we will make no difficulty to believe that the corpuscles exhaling from them at that time, are impregnated in some degree with the same power and qualities.

7. *Of all the passions, anger or rage is the most dangerous, and often converts the corpuscles steaming out of irrag'd creatures into poison.* This is evident by the instances of a mad Dog, a straitened Cat, an angry Bee, &c. Nay, most of the venomous Creatures, as Scorpions, Snakes, Vipers, &c. do but sting, when they are incensed.

8. *The strongest poisons partake of the nature of leaven so far, that a very small quantity of 'em puts a huge lump into fermentation.* There are few but know, that an inconsiderable grain of Arsenic or Sublimate will kill the most vigorous man in the world. But I know an instance that comes nearer to the purpose, viz. to shew the strong working of corpuscles steaming out of living creatures, when they are irrag'd or distressed; and the truth of which I can testifie, as having happen'd to persons of my acquaintance. A Drugsters Prentice (a) of Grenoble (a) Roquet. having foolishly incens'd a Viper, was scratch'd by it on the fore-finger, but so slightly that he was not aware of it. He continued all the afternoon to go about his business, without feeling the least pain or trouble in the world, went to supper, then to bed and fell asleep. But between twelve and one in the morning, he found himself so ill on a sudden, that he call'd for a Priest instead of a Physician, fearing that his last hour was come. He himself did not know the cause of his disease; but it was discover'd by an able Physician (b), (b) The late Mr. who made him give an exact account of what he had done the former day: And for a farther conviction he saw the gangrene on the scratched finger. Chalvet. To be short, the gangren'd finger was cut off, and the Patient rescued as from the clutches of death, by the use of the volatile Salt of Viper. Pray observe that these venomous particles had all the general properties, which I have ascribed to the steams of living bodies, viz. that they were *small, hard, weighty and clammy*. How small must they have been, since they penetrated through all the pores and fibres of that young mans body, by an insensible scratch? how hard, weighty and clammy, since their nature could not be alter'd by the whole mass of humours and blood, but that these few and small particles chang'd and corrupted the whole.

9. *The pores of different bodies are of a different figure, so that the one, are fitted for a sort of steams, and the others for another.* This Axiom needs no proof, but only to be well remembred; for it is the cause, that what works upon one man has no effect upon another, no, not upon the same man at several times. Thus during a contagion, some who



who daily converse with those that have the Plague take no harm; whereas others are infected by those few small corpuscles, that are spread in the Air.

10. *The steams exhal'd out of living bodies are not easily carry'd away by the wind.* This is the chief *Theorem*, which if I prove, the whole matter will be clear'd. I have shew'd them to be small, hard, weighty and clammy; qualities which render them improper for motion. If it be objected that they swim in a fluid, whose determinations they are forc'd to follow: I answer, first, that all the corpuscles that make up the Atmosphere are not equally moveable: for the *Æthereal* matter moves very swiftly, and as in an instant, as appears by the impression of luminous objects: Whereas the gross particles of the air do not flow so quickly as a post-horse can ride; for in calm weather you may know that you outrun the air, by a small wind continually blowing on your face, which being not felt by others, cannot proceed but from the opposition the Air makes to your riding swifter than his ordinary course. Exhalations move yet slower than the Air, and it seems that the most violent Winds cannot blow them all away. For the Fermentations of the Earth, that are the store of these Exhalations, are made in the ground, which transpires but insensibly at certain times, and at others very abundantly; however the constitution or temperature of the Air of different places, save the variation that is produc'd by the four seasons of the year, is almost always the same; which could not be, if all the Exhalations were blown away by the first Wind that rises: for then the places whitherto these Exhalations should be blown, would take, at least for a certain time, the qualities of the place whence they flow: as it happens sometimes, tho very seldom, that by extraordinary Earthquakes, Fermentations and Winds, some places become healthful or unwholsom, all the former Exhalations being dissipated and succeeded by contrary ones.

Secondly, what Hypothesis soever you chuse for the formation of Winds, my corpuscles are so small, hard and heavy, that they will not be hurt by them. For whether they proceed from the heat of the Sun, or from Fermentations rarefying the Air, or from Vapors and Clouds breaking into it; the Winds still begin in a dilated place of the Atmosphere: so that this air spreading round about, or tending to a certain point whitherto it's determin'd, and the neighboring air which is driven from its place, ebbing to that where the rarefaction has been made; in that mutual conflict, the particles of the air which contain the small and hard effluvia, will remain unmoved, as a Ship beaten by two contrary winds, will neither go forward



forward nor backwards. However, I will not infer, that they are absolutely unmoveable : it suffices, for my purpose, at present, that they cannot easily be blown away. For the hunting out of the Murtherers, was begun soon after they had committed the Fact; and the Discoverer was directed in his pursuit, by the Corpuscles that continued to steam out of their bodies.

It's so easy to apply these principles to the matter in hand, that I would not trouble you or my self any farther about it, were it not yet necessary to answer some questions by the way. Our Countryman felt an extraordinary commotion as soon as he entred the Cellar, especially when he came upon the place, where the two murdered bodies had fall'n, his Pulse rose, he swet, he grew pale, he fell into a swoon, his Wand turned swiftly ; because these effluvi-ums are acute, hard and venemous corpuscles, which putting him into Convulsion-fits, contract the bending muscles of his fingers, and consequently make the Wand he holds fast in his hands to turn. For there is no mystery in this Wand, it being but a forked stick, cut at any time from any Tree, and which any one may give him if he please, so that it serves only as an outward sign to show that he is on the footsteps of the Murtherers. This experiment being repeated, a fortnight or three weeks after, the same effect almost was produced, but differently upon several persons, according to the difference of their pores and constitution. The reason of it is, that the air of a Cellar having little communication with that of the Atmosphere, the *Effluvi-ums* could not be so soon dispersed. Our Discoverer followed the Assassins upon the *Rhone* ; because these steams being small, rigid and ponderous, some of 'em were entred into the particles of the Air, and had stopped their course for a while : He pointed at an Arch of the Bridge of *Vienne*, under which they had passed ; because they being clammy, some of them had stuck at the walls of the Arch. By the same means he is able to show the Tables, Beds, and Vessels they have made use of.

He is not so much troubled when he follows them upon the water, as when he pursues them upon the land ; because in the first case, the effluvi-ums which fall down are carried away by the course of the River : Whereas in the second they remain upon the ground, and are drawn up by the Sun or Wind, to supply the place of those that have been dispersed by the motion of the Air. And accordingly, when the crook'd-back Taylor was brought to *Lyons*, it was observed, that our Countryman could not go after him, but was forced to walk a great way before, to avoid the vexation that the effluvi-ums of this Murtherer put him into. In short, the most sur-  
G prizing

prizing circumstance of this relation is, that this Countryman hath the courage willingly to expose himself to such continual troubles, in order to hunt out this sort of Rogues; for he must be either very charitable, or have a great reward promised him.

But if these corpuscles are a kind of poyson to him, why do they not affect other People? because the pores of their bodies are not fitted to receive them, or because they can but work upon a certain sort of matter, which is not to be found in others; just as the effluvia of the Small Pox do infect such as never had them, but not those that have been thoroughly purg'd of that venom. Were I acquainted with the man, and had I had occasion to examine his constitution, perhaps I could tell you more particulars. But all that I know of him is, that he was born on the 8th of *September*, 1662. between twelve and one in the morning; That he has the reputation of a good sober man, and that his Brother born two years after in the same month, has not the same property.

You still urge, That it is inconceivable how some few small effluvia spread through the open Air, should so wonderfully direct that man in his pursuit. I might mention again the prodigious operations of contagious steams and venomous corpuscles, which I have already alledged: I might add to it that of the Loadstone, whose effluvia passing through the brain of a man are yet strong enough to move a touched Needle: For put a Loadstone at one of your Ears, and a Mariners Compass at the other, observe the degree upon which the Needle stands, and place the Stone and the Needle so, that their Poles of the same name answer to one another, and a third person looking on the Compass may observe either that the Poles of the Needle do altogether change, or that they decline above 40 degrees.

But I have yet a more pregnant instance. Undoubtedly, you have been sick, or at least conversant with sick men, and therefore you may have observed that an inconsiderable smell or noise, of which they would not be sensible in health, affects them very much during their disease. The complaints they make of it do not proceed from moroseness, but from a most unwilling and sensible vexation, as I can testify by my own experience. Now as the particles that produce smells and sounds trouble a sick man, because his Organs are weakened by his Disease. So the few effluvia that remain on the footsteps of the Murtherers, continue to disturb our Countryman, because of the violent commotion his Spirits have been put in at the place of the Murther.



2. As to your question, whether he can smell out Duellists, Incendaries, Adulterers, Perjuries, and other notorious Criminals? I answer, that my Memoirs go not so far, they tell me only of his discovering boundaries of Land, Silver and Gold hidden in the ground, which, you cannot deny, emit effluvia; as appears by the *Antimonial* Cups, that will for a year, or longer, communicate an Emetic vertue to the Wine that infuses in them one night.

3. I shall finish with an hearty wish, That such Discoverers may become more common, or that their Talent may be known, and improved if they are already in being. Would to God we had a hundred People in *London*, that could hunt out not only Robbers and Murderers, but also all sorts of Cheats and Rogues: and that they were allowed so much for every one that should be apprehended and convicted by their means. It would be a ready way to reform this great City, which however considering its bigness, is not near so much corrupted, as many other I could name. A blessing that cannot be ascribed but to the public Profession of the Protestant Religion, as may be easily made out.

February, 6.



## LETTER VII.

*To the Honoured Dr. Garth, one of the  
Colledge of Physicians in London.*

## ARGUMENT.

*Of a Dead Body not growing stiff, nor putrefying in Three Weeks  
time.*

*Honoured Sir,*

**S**INCE I have undertook to entertain the World with surprizing relations, I shall add here another, that I have from good hands; for tho it be not so incredible as the former, yet it's so unnommon, as to deserve physical observations; and it being somewhat out of my sphere, I shall take the liberty of asking your opinion concerning it.

*Claude Mairai, a French Souldier, having broke one of his Legs in leaping over a Ditch, two or three miles from Tournay, was brought into an Hospital of that City, and some days after seiz'd with a Bloody Flux, which tormented him so, that having left him nothing but skin and bones, at last it killed him, November 9. 1692, being 23 years of age. His dead body was put among others to be interr'd, but the burier did not take it up, because it appear'd as tho it had not been dead, having a chearful countenance, a florid colour, flexible limbs, and no ill scent at all. As it continued so, for several days, they put it in a Coffin, wrapt up in a white Linnen cloath, leaving the face and feet uncover'd, so that it might be seen by the curious, who resorted thither in great numbers. It remained in that state, without any considerable change, till the 29<sup>th</sup> of November, that it was buried, in a Lead Coffin, with his name engraven*

engraven upon it, by order of the Archbishop of *Cambray* Nay this Prelate and the Intendant thought it worth their while to cause, each on his side, a verbal process to be made of this accident, both to clear the matter of fact, and to preserve the memory of it.

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### Dr. Garth's Answer,

*Reverend Sir,*

I Do not much wonder that the dead body should continue so many days without any offensive smell; because the dysentery prevailing so long, must without doubt so far promote evacuation, as to reduce the body to that emaciated state you speak off; not only the sulphureous parts of the blood, which in their own nature are inclinable to putrifie must be thrown off but also all the other fluid and unctuous humors whatsoever. Besides, I my self have seen the treatment of a Person sick of this distemper at the *Hotel Dieu* at *Paris*, and I remember the Medicines the Physicians insisted upon, were the Powder of Myrrhe given several times a day, and also Turpentine Clysters, which were frequently injected, and in a great quantity. Monsieur *Moraine* told me at the same time, 'twas a method generally used in their Camp-Hospitals; now 'tis well known of how much use Myrrh and Turpentine are to preserve dead bodies from putrefaction; considering also the penetrating quality of the latter, and its capacity of diffusing it self so effectually. As to that unusual plyableness of the Limbs you write of; 'tis certainly the animal Spirits which, by their constant irradiation of the Nerves, keep the body in an easy hability and compliance: Andtho after death there can be no animal Spirits, yet there may be such an intestine struggle from differing particles acting upon one another, as may continue that fermentation tho faintly, which at first was vigorous, and the occasion of the dysentery. Thus we see an acide Spirit poured upon Steel, will communicate a heat to the Vessel that contains them both, some considerable time after the first tumultuous boyling seems to be composed. But how far this insensible ebullition may promote a florid color, I will not undertake to determine, unless I were sure of the matter of fact.

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## LETTER VIII.

*To the Author of these Memoirs,*

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### ARGUMENT.

*The subject of this Letter, Philological. A new Argument against the Socinians. A public and a private Instruction used in the Primitive Church. That the Mystery of the H. Trinity was not openly preached before the Unbaptized; and therefore the Creed and the New Testament not read before the Catechumens or Probationers. That several Dogmes were concealed from their Knowledge, as well as the Rites of the Sacraments. Who were the enlightned. Hebr. vi. 4, 5, 6. What gave the boldness to the Gnosticks of feigning Mysteries. The Original of Arianism, and of the Modern Heresies. Inferences from this. The Decisions of the Church ought to be reverenc'd. Short Reflections of the Author. An Invitation to the Learned to answer this Letter.*

S I R,

**H**AVING observ'd that you are a zealous asserter of the Mystery of the H. Trinity, I make bold to send you my thoughts concerning the grand objection that the *Socinians* use to make against it.

We hold that this Mystery is the fundamental point of the Christian Religion, and that without the belief of it no Salvation can be had: But how should it be believed, say they, when it is not preached. The very name of *Trinity* is not to be found in the Books of the three first Ages of the Church, no more than that of *Consubstantial*: and as to the Doctrine it self, it is there so obscurely taught, or variously explain'd, that an unprejudic'd person will hardly



hardly conceive, that, by such general and imperfect notions, the vulgar Christians could frame to themselves a distinct and uniform Idea of that Mystery.

You know the use these men make of this, that the modestest amongst them talk of no less than rejecting the fundamental Article of Faith, as an unnecessary speculation. I hope that the following thoughts may solve this difficulty, and that you will not deny them a place in your *Memoirs*, since they concern one of the most important inquiries of Ecclesiastical History.

St. *Paul* testifies that the preaching of the Cross was an occasion of Scandal to the *Jews*, and appeared a Folly to the *Greeks*. This prejudice being one of the greatest hinderances to the propagation of Christianity, it was requisite that they should bethink themselves of a way to remove that obstacle. And therefore they used a different method in their Sermons according as they preached, either to the *Jews*, or to the *Gentiles*. To the first they proved, That *JESUS* was the promised *Messiah*, and consequently the Son of God, as they themselves confessed that the *Messiah* should be. But their mistake was, that they looked upon him as an Earthly King, sent from Heaven to conquer the World, and enslave the rest of Mankind, that the *Jewish* Nation might Lord it over them: Whereas he was only come to reform wicked men, to redeem their Souls, and to erect a Spiritual Kingdom. As to the Heathens, since *Polytheism* was their grossest error, the Apostles at first endeavour'd only to demonstrate to them, That there was but one God, who had made Heaven and Earth, that he fill'd the whole World; and that therefore it was absurd to adore so many Gods, or one and the same God under so many different forms, or to imagine his virtue to be included in Temples, Statues and Images.

You will see these two ways constantly followed, in the several discourses St. *Peter* and St. *Paul* made in the Synagogues of the *Jews*, or to the *Gentiles*, as at *Lystra* and *Athens*, *Act. xiv* and *xvii*. And this prudent conduct of the first Preachers of the Gospel cannot make them to be suspected of any prevarication, because they gave a fuller instruction to their new converts, when they saw them persuaded of those preliminary points, and in a fit state to receive Baptism: At which time they did not *shun to declare unto them all the Counsel of God. Act. xx. 27.*

St. *Ambrose* in his Commentaries on the 9<sup>th</sup> Chapter of St. *Luke*, having shown that St. *Paul* observed this method in his discourse before the *Arcopagites*, renders a very pertinent reason of it: *Qui enim tractat, debet audientium considerare personas ne prius irrideatur quam audiat.*

*audiatur, &c.* 'He that preaches ought to consider with whom he has to deal, lest he should be derided before he be fully heard. 'How should the *Athenians* have been perswaded to believe that the word was made Flesh, and that a Virgin had conceived by the H. Ghost, when they laughed at the Resurrection of the dead? How ever *Dionysius the Areopagite* believed, and others likewise believed in the man [CHRIST] that they might [afterwards] believe in God. For what matters it, in what order we believe? Perfection is not looked for at the beginning, but from the beginning [or principles] we come at last to be perfect. And therefore we must follow the same order in the information of the Heathens, which St. Paul followed in the instruction of the *Athenians*. But when the Apostles spoke to the *Jews*, they told 'em that he was the *Messiah* promised by the prophetic Oracles, tho they did not prove him by their own authority to be the Son of God, before they had demonstrated that he was a just and holy man and risen from the dead, that man of whom it's said, *Thou art my Son, this day have I begotten thee.*

But we have still a more pregnant testimony of the constant use of this method, in respect of the *Neophytes*, or beginners, and of perfect Christians. St. Paul makes the distinction himself, and marks the the different ways he used toward them, when he says to the *Corin-*

(a) 1 Cor. 3. 1. 2. *thians, (a) I could not speak unto you, as unto Spiritual, but as unto Carnal, even as unto babes in Christ. I have fed you with milk, and not with meat: for hitherto ye were not able to bear it, neither yet now are ye able: for*

(b) Strom. 1. 5. *ye are yet Carnal.* Whereupon *Clemens Alexandrinus* says, (b) 'He gives here a Caution, lest the words (or mysteries) should be made publick to the Vulgar... For when he asserts that milk belongs to Children, and that meat is the food of the perfect, he understands by milk the *Catechism*, which is as the first nourishment of the Soul, and by meat a sublime Contemplation, which is the very flesh and blood of the Word, that is an apprehension of the Divine power and essence: *Tast and see, says he, that Christ is the Lord.*

(c) Tom. 12. p. 292. *Origen* is of the same opinion in his Commentaries on St. Matthew (c) and St. John. (d) But the Anonymous Author of the Commentaries on

(d) Tom. 15. p. 225. *St. Paul's Epistles*, (who certainly liv'd in the fourth Age, tho this work be none of St. Ambrose's to whom it is ascribed) speaks yet more to the purpose. *Quædam sunt Mystéria Religionis nostræ, quæ propter carnales sensus, ne scandalum patiantur, facile publicari non debent, quia non omnibus dicenda sunt omnia, sed pro unius cujusque captu moderanda sunt dicta, aliter rudibus, aliter fundatis.* 'There are some Mysteries of



of our Religion, which ought not to be easily divulged, because of the carnal senses that may be put upon them, lest they give occasion of scandal: But our words ought to be proportioned to the capacity of each understanding, and proposed otherwise to the weak, than to those that are firm and well-grounded in the truth.

*Sozomen* in the first Book of his Ecclesiastical History, Ch. 19. gives this reason of his omitting the *Nicene Creed*, that it was probable that several, who were not *INITIATED* in the Holy Mysteries, might read his Book. And therefore *Origen*, making an enumeration of the Articles of the Creed that are conceal'd from none, mentions the Birth, Passion and Resurrection of our Saviour, our rising from the Dead, and the last Judgment; but passes by the Mystery of the Holy Trinity. To this may be refer'd this saying of *St. Gregory Nazianzen* (a), *They who esteem the Holy Ghost to be God, have a divine* (a) *Orat.* *and enlightned mind; they who assert him to be so, if they speak to such* 44. *de Spir.* *as are of a sound judgment, are of sublime thoughts: but if their hearers* *Sancto.* *be weak, they are not prudent dispensers of the truth, to cast pearls into the mud.*

By these and many other Passages that might be alledg'd, it's plain that this concealing of the most mysterious Doctrines of Christianity, was generally receiv'd in the Eastern and Western Churches: so far, that the youngest *Catechumens* were in many of them not allow'd to hear the reading of the Lord's Prayer and the Creed, nor of the Gospels and Epistles, but only of the Old Testament; much less were the *Jews* and *Heathens* admitted to it. And thence it is that the Catholick Church shew'd such a resentment against those, who by weakness, and for fear of the torments they were threatned with, had deliver'd the sacred Books into the hands of the Infidels, branding them with the infamous name of *Traditores*. Moreover, since it appears that this Discipline was firmly established, and receiv'd without any contradiction, through all the Christian World, in the third and fourth Centuries, if the Rule of *St. Augustine* (b) be (b) *De Bapt.* true, *That whatsoever the Universal Church holds, that has not been institu-* l. 4. c. 24. *ted by any Council, but always retain'd and kept, may be justly esteem'd an Apostolical Tradition.* We may reasonably conclude that this method of concealing the highest Mysteries of the Christian Religion, is deriv'd from the Apostles, and their first and chief Disciples; for those ancient Fathers were so nice in observing it, that when in their publick Sermons their Text led them to a more particular Explication of some of those secret Doctrines, they cut off the thread of their Discourse with an *ἵνα οἱ μεμυρημένοι*, *the Initiated understand me*, and so pass'd to another Head. Thence it was that the Baptiz'd,

and the *Competentes*, that is, such, who after a long and serious examination were admitted Candidates for Holy Baptism, and in order thereto receiv'd a more particular instruction, are called *γνώσιμοι*, *knowing*, in opposition to the *Neophytes*, or Beginners.

But, lest you should answer, with some Protestant Divines. That this concealing concerned only the Rites and Ceremonies of the two Sacraments, Baptism, and the Lord's Supper; I shall add two Passages, which seem to decide the question. The first is of St. Basil (a), who plainly distinguishes between secret Doctrines, and those that might be made publick. *A Dogme*, says he, *is one thing, and Preaching is another; for Dogmes are to be kept private, and Preaching to be made publick.* The other, which is of St. Cyril of Jerusalem, is still more pregnant; for speaking of some Articles of the Creed (b), he says, "These Mysteries and Sacraments, the Church now reveals to those that have passed *Catechumens*, it being unusual to explain 'em to the Gentiles: For we do not declare to any Heathen the secret Mysteries of the Father, Son, and Holy Ghost: but we speak much and often in an obscure way, that the faithful, who know these things, may understand us; and those that are unacquainted with 'em, may not be hurt."

(a) Lib. de  
spir. Sanct.  
c. 27.

(b) Catech.  
Myst. 6.

This Circumspection of the primitive Church may be of great use to explain that famous Passage, *Hebr. vi. 4, 5, 6.* *It's impossible for those who were once enlightned, and have tasted of the heavenly gift, and were made partakers of the Holy Ghost, and have tasted the good Word of God, and the powers of the world to come: If they shall fall away, to renew them again unto repentance, seeing they crucify to themselves the Son of God afresh, and put him to open shame.* Pray observe the various degrees through which these Apostates had pass'd; *they were once φωτισθέντες, illuminati, enlightned*, this is the very name in Greek of the *Competentes*, or Candidates for Baptism. In that state they had tasted of the heavenly gift, *δοξαὶς ἡ ἐπεσχίσις*, because the sublime and celestial Truths that were before conceal'd from them, began then to be imparted to them: nay, they had been deem'd worthy to be raised higher, and to be made partakers of the gifts of the Holy Ghost, by the Sacrament of Baptism, and the imposition of hands. Then it was that they relished the Word of God as the most substantial food of the Soul, *καλὸν θεῶ ῥῆμα*, and the hope of a future life, as the greatest comfort of this. No wonder therefore if Men brought so hardly and slowly from so low a station to such a high degree of knowledge, if they come to apostatize, to forsake and betray the truth, to fall down on a sudden, *περὶ πᾶσαν*, no wonder, I say, if such Men cannot possibly be renew'd to Repentance, for their Apostasy must needs proceed from



as bottomless a malice, as that of the heads among the *Jewish* Priests and Pharisees, who crucify'd our Saviour, tho' they knew him to be the *Messiah*.

The easie Solution of all the *Phænomena* or dependences of a Subject, is a strong Proof of the truth of an Hypothesis in Historical, as well as in Philosophical Matters. Pray, what good account can you give of the birth of so many Heresies immediately after the death of the Apostles? for all the *Heresiarchs* were not so impudent as *Hymenæus* and *Philetes*, or *Simon the Magician*. *Valentin*, *Basilides*, *Carpocrates*, *Artemon*, *Marcion*, &c. boasted to be the true Disciples of the Apostles, who, as they pretended, had entrusted them with their most secret Doctrines. Had there been in the Peoples hands an Abridgment of the Christian Doctrine, so much as our Church-Catechism, or at least as the Creed ascrib'd to the Apostles. Had it been the universal Opinion that this short Instruction or Creed contain'd all the Articles necessary to salvation, and that Christ and his first Disciples had taught nothing but what was briefly comprehended in those Summaries, then it had been an easy task for the most vulgar Capacity to have convinced these Hereticks, by telling them, That since the Apostles had been altogether ignorant of these pretended Mysteries, they were but Madmens Dreams. On the contrary, it is hard to conceive how the *Valentinians*, *Basilidians*, and other *Gnostics*, should have made bold to vent their *Æones*, their *Abraxas*, and other impertinent Fancies, for Apostolical Traditions; had not the custom amongst the Orthodox of keeping their Mysteries secret, given an innocent occasion to that Imposture.

The Church was no sooner at peace, and the fear of the Heathens deriding our Mysteries somewhat abated, but the Christian Doctors thought the time was come for them to explain more at large their speculative Dogmes. And then it was that they fell out into a Schism, that might have prov'd the ruine of Christianity, had not the merciful God prevented it, by hastening the death of *Julian the Apostate*. *Arius* made the Son and the Holy Ghost inferior to the Father: *Alexander* would have them equal, and of the same nature: *Basilus* of *Ancyra*, and his Followers, took a middle way, and affirmed the three divine Persons to be of a like nature. Can one imagine, if that Mystery had been fully explain'd in the preceding Ages, and those Explications made common, that there would have risen so many different Opinions about it. Perhaps you will say, that how plainly soever the Christian Religion may be taught, there will be always Heresies, as we have seen at the beginning of the Reformation, when no such obscurity might be pretended. But the Case is quite dif-

ferent, for besides that our Reformers had not the same Authority with the Apostles, nor the same deference paid to them; that each Sect had Reformers of its own, and that as to this Mystery, no new Heresies have been invented, but only the old revived; we ought to consider that the *Roman Church* having usurped the whole Power of the *Catholick Church*, and afterwards misused it, by erecting a most intolerable Tyranny, a great part of her Members thought they might deprive her of her Usurpations, by examining matters a-new. And then it happen'd, as ordinarily it does in Civil Wars, that the Heads not agreeing among themselves, each endeavoured to make an interest as great as he could in the distracted Kingdom, and then modell'd his part into a separate State.

From all this, I conclude That the *Socinians* are very unjust, when they demand of us passages of the *Ante-Nicene Fathers*, not only for the essential part of this Mystery, viz. that there are three Persons, Father, Son, and Holy Ghost, and however one onely God; but even for the manner of it, as that they are *coequal, coeternal, consubstantial, &c.* They are no less unreasonable in catching hold of every petty difference they can perceive betwixt these ancient Writers, without considering that this Mystery being then not publicly taught, we can expect to find but some few footsteps of it in the Books of those times; or if we meet with more particular Accounts, the difference that may be betwixt 'em, ought not to surprize us; for it would be a Miracle, should it happen otherwise in such metaphysical matters, when they are chiefly preserved by way of Tradition.

What then, are we bound always to remain in the state of Children, and can we not be allow'd to frame to our selves any distinct Idea of that Mystery? This I will not say, but only that we ought to keep close to the definitions of the Church in this matter, as having been sufficiently examin'd in a time, when that tradition was yet fresh enough in the memory of men. It's true the *Arians* pretended to have Tradition on their side, as well as the *Catholicks*; but the first did not agree among themselves, *Arius, Aetius*, and the rest of the *Anomeans*, maintained their opinions chiefly by *Peripatetic Tenents*. The *Semi-Arians*, who made up the best and strongest part amongst them, own'd the Son of God to be of a like Nature with his Father, which sentiment differ'd but in words from the *Orthodox*, as a learned Author has lately observed (i). So that the true Tradition was soon discerned and received, and it is both absurd and unjust to call in question the decision of the ancient Church again, in a time, when we want most of the proofs and helps that the Council of *Nice* and *Constantinople* had to determine the matter.

(i) *Du Pin. Nouv. Bibl. T. 2.*



I do not know your opinion about Ecclesiastical Discipline and Government, but I am perswaded that to deny the Church a lawful and moderate Authority, is to expose the Christian World to perpetual Schisms, and to trample Religion under foot. It's true that the *Roman Church* has carried this power to an unbounded height: but because there have been Tyrants, can there never arise just Princes? or, to be freed from the arbitrary commands of an imperious Monarch, shall we have no Governors at all? The Remedy would be worse than the Disease, and our Divisions both in Church and State, might have taught us the sad consequences of this mistaken Policy.

¶ *I do not well know what to say to this Letter. It cannot be denied but that there are some things true: however, methinks, I perceive several mistakes in it. In this uncertainty, I thought the best way I could take was to publish it, in hopes that some of our learned Divines might vouchsafe to return an answer to it, and redress the Author's faults. For the Question seems one of the most important in Ecclesiastical History: Whether the Mystery of the H. Trinity has been openly taught, and before all sorts of People, during the three first Centuries? I shall wait a month or two for some Answer; and if during that time there comes nothing to my hands, I shall endeavour myself to make some remarks upon this Letter.*

## LETTER IX.

### ARGUMENT.

*A Way to preserve Fruits sound and entire from one Season to another. The Nature and Composition of Glass, and its chief properties explained. That neither Air nor Water nor even the most subtile Odors can penetrate it, proved by several Experiments. Objections against these Proposals answered.*

S I R,

**Y**OU think it almost impossible to preserve Fruits a whole year, without losing any thing of their Color, Figure, Taste, or Savor: I suppose I have found a way that comes pretty near it, which you may try, whensoever you please.

Take

Take a Glass-vessel whose mouth is large enough to receive the Fruit, without hurting it, dry it a little by the fire, both to rarify the inward air, and to take away the humidity, that might be about the sides of the Glass. Then put in your Fruit which must be very sound and clean, neither too green nor too ripe; but take care above all that it be not wet, cover it with a stopple or lid of Glass, and seal it *Hermetically*, melting the brink of the lid and the lips of the vessel with the flame of a Candle, that they may be incorporated together: set this Vessel in a place neither too cold nor too hot, as a deep Cellar, whose air, having but little communication with the exterior air, may remain the whole year, almost in the same state: I say, that these Fruits shall be preserved sound without receiving any sensible alteration; which I prove thus.

Glass is made of the Ashes of a Plant called *Soude*, and of Fearn, whose particles are of an irregular figure, and contain many porous and spongy Salts: which being exposed to the utmost activity of the fire have their corners broken, and their small superficies so polished, that they touch one another almost on all sides. However as the *Æthereal* matter is circumfused every where, and in a continual agitation; and that the fluid particles of the melted Ashes cannot resist the motion of this matter, so it gets a free passage betwixt them, but so streight, that neither the finest corpuscles of the air, nor the smallest atome of any thing besides it self, can pass through these pores. Thence it is that Glass is transparent, and withal impenetrable to any other bodies, but the small particles of light.

Thence likewise proceeds the fragility of Glass, for as it is not composed of branched particles that are intertwined together, but that they are only joyned by their superficies, and not so immediately neither, as to stop the passage of the *Æthereal* matter; it plainly follows, that they must be liable to an easy division. This however does not import that any other bodies besides that matter can pass through the pores of the Glass: For we know by daily experience, that the most refin'd Spirits are safely preserved in Glass-vessels, provided they be full and carefully stopp'd. Nay the most piercing Odors, as Oyl of Amber, Elixir or Spirit of Sulphur, and of Horse's Urine, included in a Bottle *Hermetically* sealed, do not sensibly transpire, how hard soever the Bottle be shaken, and the Liquor heated by that motion. When you cut the bark of a green Cedar-tree, there comes out a most strong and piercing Spirit in the form of smoak, which however cannot penetrate through the pores of a Crystal Viol, extremely thin, and sealed with melted Glass, so far as to impart any thing of its smell to the Water in the Viol. Of odours, those that  
are



are continually emitted from the bodies of living Creatures are none of the weakest, as appears by the quick smelling of Dogs : and yet a Gentleman having put a Partridge into a thin Glass Vessel, which he closely stopp'd, and plac'd in a dark corner of the room, and having let out a Spaniel, which ran about a long while; however neither the Dog nor the Partridge were ever sensible that they were so near one another.

If the subtle corpuscles of odours cannot be admitted through the pores of the Glass, much less will the grossest particles of the Air and Water get entrance there. And therefore a Bottle having been heated and fill'd with well-dry'd and pounded Salt, and then Hermetically seal'd, it was let down into a pit, and there left a fortnight in the water, after which time it was drawn up again, and the Salt found as dry and entire as when it was first put into the Glass. Nevertheless I will not deny that this experiment having been reiterated several times, it once or twice happen'd that some moistness was perceiv'd on one side of the Bottle, which yet does not import that the Water penetrated through it, for then it would have wetted it all over; but only that the Bottle having not been sufficiently heated, nor the Air sufficiently rarefy'd, the said Air remain'd in the Bottle, had been condensed into Water, by the coldness of the Pit.

These Experiments, the truth of which I cannot suspect, as having been made by curious searchers of Nature, perswade me, That the external agents, as air, vapour, exhalations, water, and the like, which produce more effectually the corruption and dissipation of bodies, cannot operate upon such as are closely included in Glass.

But you will say, That the corruption of Fruits proceeds from an internal Principle, *viz.* from the fermentation of their juices, which is indeed increas'd by the action of the air, and the nitrous, watery, and other heterogeneous bodies, which its corpuscles contain in their cavities: but cannot altogether cease, tho you take away this partial cause. Besides, the fermentation of soft and tender Fruits, as Cherries, Straw-berries, Ras-berries, Corants, Goose-berries, Plums, Figs, Grapes, and the like, is extraordinary quick, and may be accidentally increased in this Glass-Vessels by the natural weight and pressure of these Fruits, which by their position being directed towards the bottom of the Glass, must needs bruize one anothers skins, mix together and ferment the more violently, that there is neither room nor passage to evaporate.

This difficulty seems to overthrow all the former speculations; however before I give 'em over for lost, I shall surmize the following

ing reasons, experiments and conjectures. 1. That when Fruits have attained a certain degree of ripeness, they remain for a while in that state, provided they be gather'd at that time, and taken away from the action of the Sun. 2. That if they come afterwards to ferment and rot, this proceeds either from their mutual pressure, or from the impression of aerial, nitrous and watery corpuscles. 3. That if it were not so, no Fruits could be kept a week. 4. That in the Southern parts of *France* they use a very easy way to preserve bunches of Grapes till the very months of *April* or *May*: they cut 'em in fair weather, and chuse such as are white, thinly set, of a competent maturity, and whose Grapes are somewhat big; they hang 'em in a shady place, and shelter'd as much as possible from the effects of the Sun and Wind; and unless the season be extraordinary moist, it never, or but very seldom happens that they rot, but only that they insensibly dry away, and lose their taste by length of time.

From all this its plain, that the fermentation of Fruits comes either from their pressure one upon another, or from the operation of the Air and Sun; and that Fruits included in a Glass Hermetically sealed, and kept in a shady and temperate place, will be only exposed to the first inconveniency: so that if there could be found an Oyl without any smell and taste, and that Fruits were made to swim in it, and both included in a Glass-vessel stopp'd as before, this would methinks do the work effectually; for such an Oyl having no particles thin enough to enter into the pores of Fruits, its gross and fat particles would stop the said pores, hinder the overflowing of the juices, and consequently the fermentation.

Since I writ this, I have been inform'd by a worthy Gentleman, a great lover of Natural Philosophy, of a curious Experiment, which wonderfully confirms my conjecture, *viz.* that he had preserv'd Fish fresh, having been before cleans'd, in a Glass Vessel fill'd with Olive Oyl, and carefully stop't, a whole year; and that neither the Oyl nor the Fish lost any thing of their taste.

And therefore to avoid the trouble of Sealing the Glass Hermetically, or the danger of breaking it in melting its lips, it would perhaps suffice to cover the joyning of the Lid and Vessel with several layings of Clay and Paper between them; for that this is enough to keep out the air and moistness, appears by the daily experience of the *Chymists*, who preserve in long neck'd Bottles stop't that way, not only their Salts and Oils, but even their most volatile and spirituous liquors.



## LETTER X.

## ARGUMENT.

*Mr. Locke's Opinion about innate Idea's rejected. That we have a natural and positive Idea of Infinity. That it is the same with that of the Immensity of God. Act. xvii. 27, 28, explain'd. That Infinite Space is the most real of all Beings. Dr. Sherlock's Objections answered. Difference between indeterminate and infinite. Metaphysical, Theological and Physical Arguments for our Hypothesis. That the last Particles of Bodies must needs be hard and rigid, and that therefore the subtil matter of the Cartesians is an unaccountable Figment.*

SIR,

YOU will needs have my opinion about innate Idea's, and you are not content that I refer you to so many Authors as have discoursed of 'em. Mr. *Locke* seems to you to have demonstrated their non-existence so plainly, that you could wish, for the honor and tranquility of mankind, he had superseded from so dangerous an undertaking. You neither approve the high flights of *Descartes*, nor the base Idea our *English* Philosopher gives of humane Nature. You would have me to confute 'em both; as if it became every sorry writer to meddle with so great names, or as if it were an easy matter, to find out new notions on a subject, that has so often been brought under examination espially for me, who am so far from finding fault with 'em, that I believe they are both in the right in some respect.

However I would Mr. *Locke* had spared some harsh expressions, as that a (a) *fœtus in the Mother's womb differs not much from the state of* (a) *Essiv*  
*a Vegetable*; (b) that a decrepit old man is not far above the condition of a *Conc. Flum.*  
*Cockle or an Oyster.* Such passages as these joyned with his earnestness *Underst.*  
 in decrying all innate Idea's, either of God or of moral Vertue; in (b) *p. 14.*  
 proving that the soul sleeps by wholes, as well as the body; that it is (b) *p. 64.*  
 a *Tabula rasa*, a white paper, whereon nothing is naturally engraven, but that our senses and reflexions write on it all that we come to know by succession of time; his exalting the state and knowledge of Beasts: All this, I say, would induce any one, who were not thoroughly acquainted with the Author, to believe that he is not much inclined to grant immortality to a substance, for which he has so little esteem.

I

For

For my part, as I am perswaded that Mr. *Locke* is far from such thoughts, and that if there be any color for drawing such consequences out of his Book, it proceeds only from this, that he has applied himself more to pulling down than to building up. I shall therefore take the liberty to propose my sentiments in some things, wherein I differ from him, such as the Idea of God, which I hold to be innate or natural to thinking beings: And I am the more willing to publish my reasons for this opinion, that it is extremely beneficial to mankind.

If we have a natural Idea of *Infinity*, we have a natural Idea of God; for God alone is infinite. Mr. *Locke* will not deny the consequence, and as to such *Cartesians* as would contest the reason I give for it, viz. that God alone is infinite, I refer them to my 3<sup>d</sup> Letter, wherein I have sufficiently prov'd that the whole mass of Matter cannot be infinite, and consequently no part of it.

That we have an Idea of *Infinity* is confess'd on all sides, the question only is, how we came by't? The Gentlemen of Mr. *Locke's* opinion will not grant it proceeds immediately from God, and that we see as it were a rough draught of his essence, when we contemplate the Idea of *Infinity*: So that I am only to prove that this Idea cannot be formed by the various complications of all the others wherewith the senses furnish our understanding. And then this Idea must needs be natural, or come immediately from God, which is all one, as to my present design.

That the Idea of *Infinity* cannot be form'd by sensible Idea's, I demonstrate thus: The Idea's presented to my mind by the senses are Idea's of finite objects variously complicated by the understanding, which is a finite power too: But there is an infinite distance betwixt finite and infinite; and therefore our limited understanding cannot out of finite Idea's form an Idea of *Infinity*.

It would be unprofitable to alledge that at least we can get that way a negative Idea of *Infinity*? for a *negative Idea* signifies nothing at all; or if these two words put together have any sense, they only express that there is no relation between two Idea's that we silently compare, viz. that which we have, and that which we look for. Being much conversant with corporeal objects, we may indeed make some estimate from them, and so imagine that 100,000,000 fathoms or ages come nearer to immensity or eternity, than a line or a minute; but the first are in reality as far from infinite extension and infinite duration, as the last. And as a man who sounds a fathomless deep, has not any more distant knowledge of its depth, when he has let fall his line to the very end, than when he first put it into the water; so, after we have wearied our selves with making all possible



possible additions to unity, we are not a jot nearer advanc'd to an Idea of Infinity.

Thence it's plain that those who suppose to get the Idea of infinity that way, and by adding at last this negation without *Limits*, mistake the Idea of indeterminate for that of infinite. But since indeterminate and infinite are objects really different, the first expressing but our ignorance of the real extension or duration of an object, and the second a real and positive quality of the object to which it is ascribed; since two Ideas how like soever they be conceived are not one and the same, and since a true Idea ought to represent the object so as it is in it self, and that the Idea of an indeterminate or indefinite extension does not represent real and positive infinity: it plainly follows that the Idea of indeterminate is not that of infinite.

This mistake comes chiefly from two causes, first from our confounding the notions of positive and compleat, as Mr. *Locke* does all along; because we are accustomed to pass over, or consider but slightly such Ideas as do not strongly affect us. Secondly, Because by an overgreat familiarity with corporeal things, we have used our selves to measure and distinguish by them the objects of the intellectual world, whence proceed our gross Ideas of spiritual beings, and that we have so few proper names to express their qualities. Thus men having invented no proper word to signify *Infinity*, but contenting themselves with a negative expression, they are apt to imagine the thing as negative as the name, and to conceive infinity as an *Entia rationis*, a supposition made at pleasure which includes no reality.

But the necessity that there is that there should be an infinite being, ought to have undeceived us, and convinced us of its real existence. We cannot conceive time without eternity, for time supposes a beginning, and beginning a cause. Neither can the existence of the innumerable and various creatures, which adorn the Universe, be fully conceiv'd and explain'd, without the supposition of a Creator infinite in Wisdom, Power and Goodness. And therefore since there is an Infinite being, since we have an Idea of it, being able to distinguish it from finite and indeterminate, since it cannot be acquired by the senses; it remains only that it be natural, or that it come immediately from God.

The senses are so far from helping us to this discovery, that to be successful in it, we must abstract our thoughts from all sensible objects, that being empty of the Creatures, they may be filled with the Creator. And accordingly, we find by experience that if we suppose but for a moment all other beings to be annihilated, besides us thinking, our thoughts will presently sink into the bottomless deep of immensity,

mensity, which is that  $\gamma\upsilon\omega\varsigma\ \tau\tilde{\epsilon}\ \Theta\epsilon\tilde{\upsilon}$  that illustrious Character of the Divinity manifested in the soul of man, that proper Idea of real infinite, which we sought for, having neither beginning nor end, since it is not formed by a continued series of additions, and does not begin at a point, a minute, or an unity, nor terminate when our soul is tired with innumerable progressions.

I have often admired the deep sense of that famous passage, where *Act. xvii.* St. Paul teaches the *Areopagites*, that the end of Mens Creation (c) is, *27, 28.* that they should seek God, if happily they might feel after him and find him, or as the French translation has it, *Sils pourroient le trouver entaton-*

*(d) Αναζητων.* The word used in the Original (d) signifies to seek something as a blind man does by groping and feeling about after it, and lively represents the fruitless endeavours or fortuitous successes of those Philosophers, who seek God in the Creatures, and labor to frame an Idea of his infinite perfections, by putting together all the perfections of corporeal beings. To redress them he adds, that *he is not far from every one of us, for that in him we live, we move and have our being*: which shews that the fittest place to meet with God in, is our own soul separated from corporeal objects, and that the truest notion we can have of the Creator is to conceive him as that infinite all, which contains all the Creatures, in whom they exist, in whom they live, and by whom they move.

If it be objected that it is a debasing of the Essence of God to conceive it under the Idea of an infinite space, which if it be any thing at all, is the nearest to nothing, or that it is to make God extended, and consequently corporeal. I answer, 1. That Space is a real Being, for that it has properties, and I have prov'd it (e) to be indivisible, Penetrable, infinite, independent and Eternal. 2. That created Beings have indeed some conformity with nothing, in that they have begun and may cease to be; whereas infinite Space being Eternal and independent, is of all things the most remote from nothing that can be imagin'd. 3. That this pretended conformity between Space and Nothing is only a mistake of our Senses, used to material objects; for tho it be nothing corporeal or created, it's nevertheless a most real and necessary Being. 4. That no object is so far from the notion of corporeity, as the Idea of Space; for Matter is finite, divisible, and impenetrable; and Space infinite, indivisible and penetrable. 5. Tho the immensity and simplicity of God induces me to conceive at first his Essence under the notion of Infinite Space; yet I do not stop there, but only make use of that Idea to advance further in the knowledge of his perfections. For because I see that the Idea of Infinite Extension cannot be annihilated, I conclude from thence that the being represented by it is real, independent and eternal: And as con-  
tingent

(c) See  
Letter 3.



tingent and annihilable Beings must needs have a cause of their existence and duration, I conclude that they owe both to this real and independent Being. Moreover, as some of those Beings are endow'd with several perfections of knowledge, power, wisdom, justice and goodness, I infer that this real Being possesses them all eminently and infinitely, and that he is omniscient, omnipotent, all wise, all-just and all-good.

This Notion being rightly conceiv'd, all the Objections that may be made against it, fall of their own accord, which I shall shew in what has been alledg'd by one of the greatest Masters of Reason in this Age (a). 'We have, *says he*, an imagination of infinite space, 'which we can set no bounds to; but how far soever we extend 'our thoughts, we can still imagine something beyond that; but then 'we have no Notion, that space is any thing but only a capacity to 'receive something: nay, it seems to me to be nothing else but an 'imaginary *Idea* of Extension separated from Body and Matter; as 'we conceive place to be distinct from the Body which fills the place, 'and therefore that if the Body were annihilated, place would remain still of the same dimensions which the Body had that fill'd it. This, I confess, is true of the *Idea* of indeterminate, but not of the Notion of real Infinite, which offers itself to our mind, when we abstract our thoughts from the consideration of Creatures; so that this *Idea* being not formed either by addition or subtraction, it can neither be encreased nor diminished.

(a) Dr. Sherlock  
*Unid. of the*  
*H. Trinit. p.*  
p7.6.

(b) 'It is not the defect of our Imagination that we cannot conceive an infinite Extension, but Reason tells us that there neither is 'nor can be any such Extension, but what may be extended farther: 'now what cannot be, cannot be a real Being, for whatever is real, is I own that indeterminate cannot be infinite; but it follows not from thence, that infinite itself does not actually exist. Our abstract *Idea* of Infinity is true, positive and plain enough; for it represents its Object so, as really it is, *viz.* penetrable, unmoveable, indivisible, without beginning nor end; tho' it be not as *adequate* and compleat as that of a Triangle or a Square; it being contradictory, that a finite Spirit should perfectly comprehend Infinity.

(b) p. 77.

(c) 'If a Spirit be omnipresent by infinite Extension, the whole 'substance of the Spirit is not present every where, but part of it is 'in one place, and part in another, as many miles distant from each 'other, as the places are where such parts of the omnipresent Spirit 'are. What is indivisible has no parts, but infinite Extension or Space is indivisible; (d) for what can be divided, must be so, by any matter or body coming between its two separated parts, which must remove their extremities farther: but there is none such in simple

(c) *ib. p. 82.*

(d) See  
also Letter  
3. P. 22.

simple and infinite Space, and therefore infinite Space is properly indivisible. Now what has no parts is not present by parts, and what is not present by parts, is present by its whole substance; and therefore an omnipresent or infinite Spirit is present every-where by its whole substance.

Your confused Notions of Extension will still suggest to you, that this is a meer Sophism: But suppose a Man were so ridiculous as to assert, that the Divine Power which operates amongst Angels, is not the same that keeps the Devils in awe, and therefore that God has two Powers of different nature, one to govern Heaven, and the other to over-rule Hell. By what Reasons could we convince such an impertinent Heretick, unless it were by shewing that Power is a spiritual thing, and consequently indivisible.

But you urge, that supposing the terrestrial Globe were annihilated, there would still remain a measurable Space within the concave *Superficies* of the sublunary Orb. Why then I do not well conceive how this Space could be measur'd; for there would remain no æthereal matter, thro' which the visual line of a Man plac'd in the imaginary middle of this emptiness, could penetrate to the Stars, and they reflect their beams to his eyes. The most that you can gain by this, is only that an indeterminate number of Bodies may be made to fill this penetrable Space, which being done, they would certainly be measurable one by another; but it does not import that Space, abstractedly considered, is either measurable or divisible.

You may add that it follows from thence, that finite Spirits are indistinguishable: because, according to us, they have a penetrable extension, or are contain'd in it, and that this extension is indivisible. I answer, that finite Spirits are distinguished by their various thoughts and different degrees of power; that when they dwell upon Earth, they are farther distinguish'd by the several portions of matter they actuate: But whether the Angels in heaven, are distinguish'd one from another by some other properties, is what I do not know.

Last of all, you say that our hypothesis is only grounded upon suppositions; that we are not to argue from what God can do, but from what he has done; that all our Senses and Idea's assure us that in this World Extension and Matter are one and the same thing; whereas we have no certainty that they are separated in another World, or that they can be so in this. But methinks to have sufficiently shewn at the beginning of this Letter that we have a real and positive Idea of infinite Extension, and in the third that matter cannot be infinitely extended; whence necessarily follows, that there is another Being than Matter, to which this Infinity may be ascribed. And as this Being has been prov'd eternal and independent, and none but God  
can



can be so, 'tis likewise a necessary consequence, that it is God himself consider'd under the notion of *immense*.

According to Dr *Sherlock*, (e) "an Infinite Being, had not use and custom reconcil'd us to that expression, would be thought nonsense (e) *ib. p. 75.*" and contradiction; for every real Being has a certain and determinate nature—An Infinite Being signifies a Being absolutely perfect, or which has all possible perfections: which has no other end of its perfections but perfection it self; that is an infinite Being, not which has no end of its perfections, but which actually has all perfections and can be no more perfect than it is—As for instance, infinite Wisdom, Knowledge and Power have fixt and set bounds, beyond which they cannot go. Infinite Wisdom knows all things that are knowable, and that are wise, &c.

I would desire the Dr, or any other Divine of his opinion, to explain to us their Idea of Gods immensity, or what sense they give of the following passages: *The heaven, and heaven of heavens cannot contain thee, O God,* 1 Kings viii. 27. 2 Chr. ii. 6. & vi. 18. *Canst thou by searching find out God—It is as high as heaven—deeper than hell—The measure thereof is longer than the Earth, and broader than the Sea.* Job xi. 7, 8, 9. *Whither shall I go from thy spirit? and whither shall I flee from thy presence? If I ascend up to heaven, thou art there: If I make my bed in hell, thou art there, &c.* Psal. cxxxix. 7, 8, 9, 10. compar'd with *Amos ix. 2, 3, 4.* Thus says the Lord, the heaven is my throne, and the earth is my footstool, *Isa. 66. 1.* compar'd with *Mat. v. 34, 35.* and *Acts vii. 49.* *Can any hide himself in secret places, that I shall not see him, says the Lord? Do not I fill heaven and earth?* Jer. xxiii. 24. I grant there are Hebraisms and figurative expressions; but that the whole should be metaphorical, and signify no more, than that God is omnipotent, without extending his Essence every-where, is what I cannot conceive: and I leave it to any impartial Judge to determine with which of these Hypotheses the true and proper sense of these Passages does best agree.

I endeavor'd in my third Letter, to shew that Motion was possible, with the supposition of the World's being full: but after second thoughts, I find it extreamly difficult, not to say impossible, without the mixture of some small Vacuities, at least for a moment. My Reasons are, 1. that the last Particles of Bodies cannot be fluid, soft or flexible. 2<sup>dly</sup>, that Motion is successive, and therefore requires some time to produce its effect, how swift soever it can be conceiv'd. 3<sup>dly</sup>, that the subtil matter of the *Cartesians* is either a meer figment, or differs but in name from the small vacuities that we assert to be interspersed amongst Bodies.

1. That the last Particles of Bodies cannot be fluid, soft or flexible, I prove thus. A fluid is a body whose parts are actually divided,

ded, since they move several ways one about another, but if these parts be made up of other Particles that are fluid again, or soft and flexible, which is but a different degree of fluidity, they must likewise be actually divided, and thus *in infinitum*: so that the smallest Atom imaginable, would contain an infinite quantity of Corpuscles actually divided; but an infinite quantity of Corpuscles actually divided, must needs take up an infinite Space; and therefore, according to this Hypothesis, the smallest Atom imaginable must needs take up an infinite Space.

By this I do not mean to prove that the smallest Particles of Bodies are indivisible, it being enough, for my present purpose, that they be hard, solid and rigid, which is a plain consequence from the absurdity that there is in conceiving them soft, fluid and flexible: But if they be hard, solid and rigid, their figure cannot be easily altered, or some time at least is requir'd to produce that alteration. And therefore, as in the various motions and complications of Matter, they must needs leave betwixt 'em several of their pores to be filled immediately by these insensible Particles: if some of these Atoms chance to light into such Pores, as are not exactly adapted to their figure, there must needs be some vacuity for some time, till either the figure of the Atom be alter'd, or that it be expelled by another better fitted to that place.

*Regis Phys.  
l. 2. part 2.  
ch. 6:*

The *Cartesians* think to obviate this difficulty, by telling us, that the Particles of their subtil matter are so small that they have no determinate bigness or figure, and so swiftly moved that they penetrate through all the smallest pores and corners, that are inaccessible to other corpuscles. For my part I confess, I am not so quick as to conceive a body of an indeterminate bigness and figure: for Reason tells me that whatsoever is corporeal and finite, is terminated and figured, and magnifying glasses assure me that what I took for round and polished corpuscles, are irregular polygons. Fluids are indeed so far, of an indeterminate bigness and figure, as to change almost every moment, but it has been invincibly proved that the last particles of bodies cannot be fluid; so that even those of the subtil matter being hard, solid and rigid cannot be easily alter'd and accommodated to the figure of the pores into which they may chance to enter.

It remains then only for these Philosophers to say that these particles are indivisible mathematical points or spiritual substances: but mathematical points have no quantity at all, so that innumerable millions of them do not make up any sensible extension; whereas the last particles of matter are supposed to fill all the smallest pores and vacuities of bodies.

But



But if these Gentlemen should chuse to turn the insensible corpuscles of their subtil matter into so many spiritual substances: I should then be very unwilling to contest with 'em. For as parallelograms under the same parallels and upon equal bases, are equal; as a Triangle may be made equal to a Square and all Polygons to one another; nay as rectilinear figures may be pretty nearly adapted to circular ones, by the Method of indivisibles: so we conceive, that a Spirit, which should have an absolute power over a certain portion of matter, might change its shape at pleasure, and give it any figure whatsoever, without altering its bulk. If the *Cartesians* will have recourse to such an impertinent notion, I give them leave to do it, and I dare say it will not be so absurd as the supposition of an inanimate matter, taking all forms whatsoever in an instant and of its own accord. Otherwise, their subtil matter having neither the properties of Bodies, nor those of Spirits, they must be forced to grant that it is a meer figment, or at least that very space and incorporeal extension, which they are so loath to acknowledge.

Perhaps you will object that by taking the Idea of infinite Space for the divine immensity, I fall into the error of those antient Philosophers, who made God the soul of the world. But if my opinion in this were conformable to theirs, this would be so far from proving it erroneous, that from thence it would only follow, that I have the best and learnedest part of Antiquity on my side. I have shewn that my sentiment agrees with our natural Idea's and with the notions and phrases of the H. Scripture, and that suffices me for the present. I may methinks, already boast of having laid a pretty sure foundation for Metaphysicks and Physicks, altogether opposite to *Cartesianism*, in proving the reality of the Idea of infinite space and its identity with that of the immensity of God; as well as in shewing that extension is not the essence of matter, and that extension in reference to matter is nothing else but the union of several solid and impenetrable corpuscles: This might be confirmed by comparing my hypothesis with those of the most famous among our modern Philosophers as *Descartes*, *Gassendi*, *Borelli*, *Malebranche*, *Bernier*, &c. but this would require too much time and room. I may do it, perhaps, in some other Letters, especially if you make me some objections worth answering, or if some new and weighty argument offer it self to my mind.

F I N I S.

1875  
The first of the year was a very  
successful one. The weather was  
very good and the crops were  
very good. The people were  
very happy and the country was  
very beautiful.

The second of the year was a  
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